

- B1**
- 11. (2X Amended) A transgenic non-human animal comprising a recombinant nucleic acid expression vector encoding a heterologous cholinesterase (ChE) enzyme selected from the group consisting of:
- (a) wild-type human AChE;
 - (b) wild-type human BChE;
 - (c) variants of the AChE and BChE of (a) and (b); and
 - (d) wild-type insect ChEs,
- wherein the nucleic acid is expressed in the germ cells and somatic cells of the transgenic animal.--
- 12. (2X Amended) The transgenic non-human animal of claim 11, wherein the animal is *Xenopus* or mammal.--
- 13. (2X Amended) The transgenic non-human animal of claim 12, wherein the recombinant expression vector comprises a nucleic acid encoding a human AChE or a biologically active derivative thereof, which nucleic acid comprises:
- (a) consecutive nucleotides having the nucleic acid sequence set forth in SEQ ID NO: 1 or a fragment thereof;
 - (b) consecutive nucleotides having the nucleic acid sequence set forth in or a fragment thereof; or
 - (c) consecutive nucleotides having the nucleic acid sequence set forth in SEQ ID NO:5 or a fragment thereof.--
- 14. (2X Amended) The transgenic non-human animal of claim 11, wherein the recombinant expression vector comprises a promoter which controls the transcription of the nucleic acid sequence encoding AChE and is selected from the group of eukaryotic host cell compatible promoters.--
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Page 3

B2

- 17. (2X Amended) A transgenic non-human animal assay system for studying secretion, control of production and biochemical properties of cholinesterases in mammalian milk, comprising the transgenic mammal of claim 12.--
 - 18. (2X Amended) The transgenic non-human mammal of claim 12, wherein the transgenic non-human mammal is capable of expressing amounts of ChE enzyme in its mammary glands.--
 - 19. (2X Amended) The transgenic non-human mammal of claim 18, wherein the ChE enzyme is wild-type human AChE or a variant thereof.--
 - 20. (2X Amended) The transgenic non-human mammal of claim 19, wherein the AChE variant is selected from the group consisting essentially of recombinantly-produced point mutation and deletion of one or more residues and mutations.--
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B3

- 23. (2X Amended) The transgenic non-human mammal of claim 12, wherein the mammal is female and the ChE enzyme expressed in the cells of the mammal is wild-type human AChE or a variant thereof.--
- 24. (2X Amended) A method of producing recombinant human AChE comprising the steps of:
 - (i) providing a lactating transgenic non-human female mammal according to claim 23;
 - (ii) obtaining milk from the transgenic non-human mammal of step (i); and
 - (iii) isolating human AChE from the milk obtained in